

## ABSTRAK

Joshua Valentino: Pengaruh Model Pembelajaran *Project based learning* Terhadap Hasil Belajar Instalasi Penerangan Listrik Pada Siswa Kelas XI Teknik Instalasi Tenaga Listrik SMK Medan. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2023.

Permasalahan yang dibahas pada penelitian ini (1) bagaimana hasil belajar peserta didik yang diajar menggunakan model pembelajaran *project based learning* dan *creative problem solving*?, (2) apakah hasil belajar siswa yang diajarkan dengan menggunakan model pembelajaran *project based learning* lebih tinggi dibandingkan hasil belajar dari model *creative problem solving*?. Berdasarkan rumusan masalah tersebut sehingga tujuan dalam penelitian yaitu (1) untuk mendapatkan hasil belajar peserta didik yang mendapatkan perlakuan dari model pembelajaran *project based learning* dan *creative problem solving* (2) untuk dapat mengetahui apakah hasil belajar model pembelajaran *project based learning* lebih tinggi dari pada hasil belajar dari model pembelajaran *creative problem solving*

Jenis penelitian quasi eksperimental (eksperimen semu) dengan pengambilan sampel secara acak. Pada penelitian ini populasi penelitiannya yaitu peserta didik kelas XI TITL SMKN 14 Medan. Adapun sampel penelitian terdiri dari 2 kelas yaitu peserta didik di kelas XI TITL 1 sebanyak 32 peserta didik yang dijadikan kelompok eksperimen yang mendapatkan pola pembelajaran *project based learning* dan kelas XI TITL 2 sebanyak 32 peserta didik yang dijadikan kelompok kontrol. Jenis instrumen soal yang dipakai yaitu berbentuk pilihan ganda sebanyak 25 soal.

Berdasarkan hasil penelitian bahwa skor mean *pre test* di kelompok eksperimen dengan skor 41,13 sedangkan di kelompok kontrol dengan skor 39,88. Pada skor mean hasil belajar *post test* pada kelas eksperimen mendapatkan hasil sebesar 76,13 sedangkan skor mean pada kelompok kontrol sebesar 65,38. Berdasarkan hasil uji analisis persyaratan bahwa data sampel pada kedua kelompok yaitu kelompok eksperimen dan juga kontrol memiliki distribusi data normal dan memiliki varians yang serupa atau sama sehingga dapat menggunakan rumus *independent sample t* untuk menguji hipotesis statistik adapun data didapat pada uji *independent sample t* nilai  $t_{hitung} = 3,571$  dan nilai  $t_{tabel} = 1,671$ . Sehingga kedua nilai  $t$  tersebut dibandingkan sehingga nilai  $t_{tabel} < t_{hitung}$  atau  $1,671 < 3,571$ . Berdasarkan analisis uji  $t$  tersebut maka  $H_0$  diterima yaitu : “rata-rata hasil belajar siswa yang diajar dengan menggunakan model pembelajaran *project based learning* lebih tinggi dari pada hasil belajar peserta didik yang diajarkan dengan menggunakan model pembelajaran *creative problem solving* pada mata pelajaran instalasi penerangan listrik

Kata kunci: *Project based learning*, *Creative problem solving*, hasil belajar, *Internet of Things*

## ABSTRACT

Joshua Valentino: *The effect of Project based learning Learning Model on Learning Outcomes of Electrical Lighting Installation in Class XI Students of Electrical Power Installation Engineering at SMK Medan*. Thesis. Faculty of Engineering, State University of Medan. 2023.

The problems discussed in this research are (1) How are the learning outcomes of students who are taught using the project-based learning and creative problem-solving learning models?, (2) What are the learning outcomes of students who are taught using the project-based learning model higher than the learning outcomes of creative problem-solving models?. Based on the formulation of the problem, the objectives of the research are (1) to obtain the learning outcomes of students who receive treatment from project-based learning and creative problem-solving learning models (2) to be able to determine whether the learning outcomes of project-based learning models are higher than the results learn from the creative problem-solving learning model

This type of research is quasi-experimental (quasi-experimental) with random sampling. In this study, the research population was class XI TITL students at SMKN 14 Medan. The research sample consists of 2 classes, namely students in class XI TITL 1 as many as 32 students who were used as an experimental group who received project-based learning patterns, and in class XI TITL 2 as many as 32 students were used as the control group. The type of question instrument used is in the form of multiple choice of 25 questions.

Based on the results of the study, the mean pre-test score in the experimental group was 41.13 while in the control group, it was 39.88. The mean score of the post-test learning outcomes in the experimental class was 76.13 while the mean score in the control group was 65.38. Based on the results of the requirements analysis test, the sample data in both groups, namely the experimental group and also the control group, have normal data distribution and have similar or the same variances so that they can use the independent sample t formula to test the statistical hypothesis.  $3.571$  and  $t_{table} \text{ value} = 1.671$ . So that The two t values are compared so that the  $t \text{ table value} < t \text{ count}$  or  $1.671 < 3.571$ . Based on the analysis of the t-test,  $H_a$  is accepted, namely: "the average learning outcomes of students who are taught using the project-based learning model are higher than the learning outcomes of students who are taught using the creative problem-solving learning model in the subject of electric lighting installation".

Keyword: *Project based learning, creative problem solving, learning outcomes, Internet of Things*